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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 941,858	08 30 2001	Lingappa K. Mestha	109257	7546

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EXAMINER

SUAREZ, FELIX E

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/941 858

Applicant(s)

MESTHA ET AL

Examiner

Felix E Suarez

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 12 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-3, 8-13 and 18-26 is/are rejected.
- 7) ☐ Claim(s) 4-7 and 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 03 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No.(s) _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No.(s) 2 | 6) <input type="checkbox"/> Other _____ |

DETAILED ACTION

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

IN THE SPECIFICATION:

In page 1 line 7, blank space "_____" has been completed -09/941774--.

Authorization for this examiner's amendment was given in a telephone interview with J. Adam Neff on March 06, 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in-
 - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
 - (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29,

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2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 8, 9, 11-13, 18, 19 and 21-26 are rejected under 35 U.S.C. 102(e) as being unpatentable over Mestha (U.S. Patent No. 6,449,045).

With respect to claims 1 and 11 Mestha teaches a method (or system) of determining a reflectance spectrum (see col. 3, lines 3-5), comprising:

obtaining a normalized value (see col. 3, lines 30-38) from a plurality of illuminant sensor outputs, each illuminant sensor output indicating a reflectance value obtained from a target (see col.3, lines 6-23 and col.4, lines 5-14);

obtaining reference data from a reference database that correlates reference spectra with a corresponding plurality of normalized illuminant sensor outputs for reference colors, the reference data including data in a neighborhood of each reflectance value (see col.3, lines 30-44); and

determining a spectrum \hat{S} based on the illuminant sensor outputs and the reference data, wherein the determining step places greater importance on the data in the neighborhood of each reflectance value (see col. 5, lines 46-67).

With respect to claims 2 and 12, Mestha further teaches wherein the determining step is performed based on linear operators (see col. 3, lines 57-60 and col. 4, lines, 35-38).

With respect to claims 3 and 13, Mestha further teaches wherein the linear operators include a conversion matrix A^* , and the determining step multiplies the conversion matrix by an augmented vector V of the normalized value (see col. 5 line 56 to col. 6 line 10).

With respect to claims 8, 9, 18 and 19, Mestha further teaches wherein the determining step avoids a recursive loop (or matrix inversion) by including a matrix inversion (or recursive loop) (see col. 5, lines 31).

With respect to claims 21 and 25, Mestha teaches a coloring or color detection system incorporating the spectral determination system (see col. 6, lines 46-49).

With respect to claim 22 Mestha teaches wherein the coloring system is one of a digital photocopier and a color printer (see col. 7, lines 44-53).

With respect to claim 23 Mestha teaches wherein the coloring system is a xerographic color printer (see col. 7, lines 44-53).

With respect to claim 24 Mestha teaches wherein the coloring system is an ink-jet printer (see col. 7, lines 44-53).

With respect to claim 26 Mestha teaches a storage medium on which is recorded a program for implementing the method (see col. 4, lines 5-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mestha (U.S. Patent No. 6,449,045) in view of Walowit et al. (U.S. Patent No 6,147,761).

With respect to claims 10 and 20 Mestha teaches all the features of the claimed invention, except that Mestha does not teach performing temperature compensation to the normalized value.

But Walowit et al. (hereafter Walowit) teaches that the reference photodetector and the sample photodetector are preferably identical devices and are preferably mounted back to back on the printed circuit board so that, not only will the photodetectors be substantially identical, they will share environmental characteristics, such as temperature, humidity, electrical noise, etc. Therefore, the photodetectors will be substantially thermally matched so that temperature stabilization of the photodetectors is not required. This is because the

temperature variances will cancel each other out in the reflectance calculation (see Walowit, col. 9 line 60 to col. 10 line 9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Mestha to include the temperature stabilization in a photodetector as taught by Walowit, because the temperature stabilization in a photodetector cancel the temperature variances in the reflectance calculation.

4. Claims 4-7 and 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wandell et al. [U.S. Patent No 4,648,051] describes a system for measuring a true color by estimating the spectral reflectance.

Zhou et al. [U.S. Patent Application Publication No 2002/0012398] describes a color correction.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felix Suarez, whose

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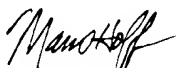
telephone number is (703) 308-4926. The examiner can normally be reached on weekdays from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on (703) 308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

March 20, 2003

F.S.


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800